

ASBESTOS Contaminants						
Contaminant (units)	Sample Date	MCL Violation	Range	MCLG	MCL	Likely Source of Contamination
Total Asbestos (MFL)	07/21/04	NO	ND	7	7	Decay of asbestos cement water mains; erosion of natural deposits

LEAD and COPPER Contaminants						
Contaminant (units)	Sample Date	Your Water	# of Sites Found Above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) <i>90th percentile</i>	Summer 2002	0.003	0	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) <i>90th percentile</i>	Summer 2002	0.383	0	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800) 426-4791.

DISINFECTION BYPRODUCT PRECURSORS Contaminants							
Our water system used [Step 1] as the method to comply with the disinfectants/disinfectant byproducts treatment technique requirements							
Contaminant (units)	Sample Date	MCL/TT Violation	Your Water	Range low/high	MCLG	MCL	Likely Source of Contamination
Total Organic Carbon (ppm) (TOC)-RAW	Weekly Tuesday	NO	7.61		NA	TT	Naturally present in the environment
Total Organic Carbon (ppm) (TOC)-Treated	Weekly Tuesday	NO	2.63	47.8/74.7	NA	TT	

Depending on the TOC in our source water, the system MUST have a certain % removal of TOC or must achieve alternative compliance criteria. If we do not achieve that % removal, there is an alternative % removal. If we fail to meet the alternative % removal, we are in violation of a Treatment Technique (TT).

STEP 1 TOC Removal Requirements			
Source Water TOC (mg/L)	Source Water Alkalinity mg/L as CaCO3 (in percentages)		
	0 - 60	> 60 - 120	> 120
> 2.0 - 4.0	35.0	25.0	15.0
> 4.0 - 8.0	45.0	35.0	25.0
> 8.0	50.0	40.0	30.0

DISINFECTANTS and DISINFECTION BYPRODUCTS Contaminants						
Contaminant (units)	MCL/MRDL Violation	Your Water	Range low/high	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) Total Trihalomethanes	NO	42.0	3.3/97.0	NA	80	By-product of drinking water disinfection
HAA5 (ppb) Total Haloacetic Acid	NO	17.5	<2.0/40.0	NA	60	By-product of drinking water disinfection
Bromate (ppb)	NO	ND		0	10	By-product of drinking water disinfection
Chlorine (ppm)	NO	1.65	1.48/1.82	MRDLG=4	MRDL=4	Water additive used to control microbes

WATER CHARACTERISTICS Contaminants				
Secondary Contaminants, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic contaminants normally do not have any health effects and normally do not affect the safety of your water.				
Contaminant (units)	Sample Date	Your Water	Range	Secondary MCL
Iron (ppm)	11/17/04	ND	NA	0.3
Manganese (ppm)	11/17/04	0.0024	NA	0.05
Nickel (ppm)	11/17/04	0.0019	NA	NA
Sodium (ppm)	11/17/04	25.0	NA	NA
pH	11/17/04	7.30	NA	6.5 -8.5

CRYPTOSPORIDIUM	
<i>Our system monitored for Cryptosporidium and found levels of (0.76 oocysts/L) in one out of 12 monthly samples in the source water and found no detects in a 12 month period of the finished water leaving the water treatment facility. Cryptosporidium, or Crypto,</i> is a microbial parasite which is found in surface water throughout the U.S. Although Crypto can be removed by filtration, the most commonly used filtration methods cannot guarantee 100 percent removal. Our facility utilizes a multi-barrier approach for removal; Ozone is used as a pre-oxidant and disinfectant in both pre and intermediate treatment of our water prior to filtration. Monitoring of our source water indicates the presence of these organisms; however, current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infections include nausea, diarrhea, and abdominal cramps. Most healthy individuals are able to overcome the disease within a few weeks; however, immuno-compromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection. Cryptosporidium <u>must</u> be ingested for it to cause disease, and it may be spread through means other than drinking water.	

2004
DRINKING
WATER QUALITY
REPORT

WATER QUALITY

2004 REPORT

City of Wilmington 2004 Water Quality Report

SPRING 2005
Volume 2 Number 2



No Violations

During 2004, or during any compliance period ending in 2004 there were **NO** violations of drinking water standards.

Questions

If you have any questions about this report or concerning your water, please contact Mike E. Richardson, Superintendent at 910-343-3690. We want our valued customers to be informed about their water utility.

En Espanol

Este informe contiene informacion muy importante. Traduzcalo o hable con un amigo quien lo entienda bien.



343-3690

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies.

What EPA wants you to know...

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the **Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791)**.



Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocomprised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds,

reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include **microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; **inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; **pesticides and herbicides**, which may from a variety of sources such as agriculture, urban storm water runoff, and residential uses; **organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and **radioactive contaminants**, which can be naturally-occurring or be the result of oil production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

When you turn on your tap, consider the source



The water that is used by this system is surface water from the Cape Fear River located in Bladen County at Kings Bluff and from ground water wells located at Beacon Woods, Masonboro Forest, Lords Creek, and Hillside.

Source water assessment program (SWAP)

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contamination Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

The relative susceptibility rating of each source for the City of Wilmington was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherit vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings are summarized in the table below:

Susceptibility of PCSs	
SWAP Report Date April 1, 2005 PWSID #04-65-010	
Source Name	Susceptibility Rating *
Cape Fear River	Moderate
Lower C.F. W&S Authority	Moderate
Beacon Woods Well	Lower
Masonboro Forest Well	Lower
Lords Creek Well	Lower
Hillside Well	Moderate
*It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the systems' potential to become contaminated by PCS's in the assessment area.	

The complete SWAP Assessment report for the City of Wilmington may be viewed at:www.deh.enr.state.nc.us/pws/swap. Please note that because SWAP results and reports

are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this water quality report was prepared.

To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program - Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email request to swap@ncmail.net. Please indicate your system name, PWSID #04-65-010, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the **Source Water Assessment staff by phone at 919-715-2633.**

Violations your water system received

During 2004, or during any compliance period ending in 2004 there were **NO** violations of drinking water standards.

Water quality data tables of detected contaminants

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The enclosed tables list all the drinking water contaminants that we **detected** in the last round of sampling for the particular contaminant group. The presence of contaminants does **not** necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in these tables is from testing done January 1 through December 31, 2004.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.



Unregulated contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Definitions

Action Level (AL) The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Residual Disinfection Level Goal (MGDLG) The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfection Level (MRDL) The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Contaminant Level (MCL) The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Not-Applicable (N/A) Information not applicable/not required for that particular water system or for that particular rule.

Non-Detects (ND) Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

Nephelometric Turbidity Unit (NTU) Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Parts per billion (ppb) or Micrograms per liter (ug/L) One part per billion corresponds to one minute in *two thousand years*, or a single penny in \$10,000,000.

Parts per million (ppm) or Milligrams per liter (mg/L) One part per million corresponds to one minute in *two years* or a single penny in \$10,000.

Treatment Technique (TT) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Note: MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

2004 Water Quality Data Tables

MICROBIOLOGICAL Contaminants					
Contaminant (units)	MCL Violation	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria <i>(presence or absence)</i>	NO	0.88% <i>present</i>	0	5% of monthly samples are positive	Naturally present in the environment
Fecal Coliform or E. coli <i>(presence or absence)</i>	NO	0	0	0*	Human and animal fecal waste

*Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive)

TURBIDITY* Systems with population >10,000					
Contaminant (units)	MCL Violation	Your Water	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU)	NO	0.208 99.98%	NA	TT = 1 NTU TT= percentage of samples <0.3 NTU	Soil Runoff

*Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95% of more of the monthly samples must be less than or equal to 0.3 NTU.

INORGANIC Contaminants						
Contaminant (units)	Sample Date	MCL Violation	Your Water	MCLG	MCL	Likely Source of Contamination
Antimony (ppb)	11/17/04	NO	1.4	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ppb)	11/17/04	NO	ND	0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppb)	11/17/04	NO	0.0200	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium (ppb)	11/17/04	NO	ND	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	11/17/04	NO	ND	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium (ppb)	11/17/04	NO	ND	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide (ppb)	11/17/04	NO	ND	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride (ppm)	11/17/04	NO	0.95	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizers and aluminum factories
Mercury [inorganic] (ppb)	11/17/04	NO	ND	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Selenium (ppb)	11/17/04	NO	ND	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Thallium (ppb)	11/17/04	NO	ND	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

NITRATE and NITRITE Contaminants						
Contaminant (units)	MCLL Violation	Your Water	Range low/high	MCLG	MCL	Likely Source of Contamination
Nitrate [as Nitrogen] (ppm)						
Surface Water	NO	1.0	NA	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Groundwater 1 - Lord's Creek	NO	ND	NA			
Groundwater 2 - Hillside	NO	ND	NA			

UNREGULATED INORGANIC Contaminants				UNREGULATED VOC Contaminants		
Contaminant (units)	Sample Date	Your Water	Secondary MCL	Contaminant (units)	Sample Date	Your Water
Sulfate (ppm)	11/17/04	27	250	Chloroform (ppb)	07/28/04	12.0
				Bromodichloromethane (ppb)	07/28/04	23.0
				Bromoform (ppb)	07/28/04	5.8
				Chlorodibromomethane (ppb)	07/28/04	25.0